



"The natural choice for energy savings"

Installation Manual



Model EC-3040 Vertical



Model EC-4824 Horizontal

Read carefully all of this manual prior to installing the unit.

System Design and Layout

SIZING

The first step is to determine what size system, or how many EnviroCools and QuietCool fans would work most effectively in cooling each type home.

The type and size of home is the main factor that determines how much air should be moved through it which give the necessary air exchanges per hour to provide sufficient cooling.

The climate zone is an important factor, and the type of construction of the home is also a consideration. Rules of thumb have been developed to arrive at satisfactory results for most conditions.

QUIETCOOL FAN SIZING RULES

1. For newly or recently constructed homes that have tight envelopes and are insulated to recent high standards, 300 CFM (cubic feet per minute) of fan performance should be added for each 100 square feet of living space. For example, a 2000 sq. ft. home should have approximately 6000 CFM fan performance.
2. For homes in cool coastal climates, the CFM's can be reduced by 20%
3. For homes in hot desert climates, the CFM's should be increased by 25% (Example: Increase from 4 to 5 fans)
4. For poorly insulated homes and homes that are not well sealed, the CFM's should be increased by 20%.
5. For homes with high or vaulted ceilings, the CFM's should be increased by 10%
6. The model number of the QuietCool fan designates its CFM performance. For example, a QuietCool QC-1500 has 1500 CFM performance, and a QC-4500 has 4500 CFM performance.

ENVIROCOOL SIZING RULES

1. One EnviroCool unit is generally adequate for up to 1,750 square feet of floor space. Two EnviroCools are needed for homes up to 3,500 sq. ft., and add one additional EnviroCool for each additional 1,750 sq. ft. thereafter.
2. This general rule is based upon the premise that the rooms in the home that are in the pathway of the moving air from the EnviroCool to each QuietCool fan will be cooled effectively. Those rooms not in the pathway may not achieve satisfactory comfort levels. To overcome this problem, additional EnviroCools can be added to these rooms if required.

LAYOUT

Each home needs to be studied and planned so that the placement of QuietCool fans and EnviroCools will achieve the optimum performance. The following rules will be helpful.

LAYOUT RULES


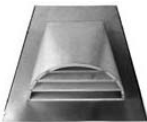



1. Each EnviroCool must be installed in an exterior wall. It should be on the lower floor of a multi-story home.
2. The best layout for the EnviroCool is to place it in the room or rooms that desire the lowest comfort level temperatures and are as far removed as possible from the location of the fans. The room closest to the EnviroCool will be coolest, and the rooms farthest from it will be the warmest.
3. Each QuietCool fan can only be installed in a room that has an attic above or adjacent to it, or has a roof directly above it.
4. When QuietCool fans are mounted in an attic, it must be ascertained that the attic has (or is capable of having) vents to the outside in the amount of one square foot for each 750 CFM of fan performance.
5. In single story houses, the fan (or fans) should be located as far as possible from the EnviroCool location. It is recommended that each bedroom and office have a QC-1500 fan installed, and/or a QC-4500 installed in a master bath. In multi story houses, the fans should be placed in upper story rooms.
6. The fans should generally be placed near the center of each room, to allow cooling by drawing air from the EnviroCool, or from an open window when outside air is cool.
7. The ideal arrangement is to have either an EnviroCool or a QuietCool fan in each room or to have the pathway of air moving from the EnviroCool to the fan go through each room that is to be cooled.

System Sizing and Venting

Home Size (Sq. Ft.)	EnviroCool	QC 1500 Fan	QC 4500 Fan	*Total Fans	Venting Required
1,000 - 1,500	1	4	0	4	8 sq. ft.
1,500 - 1,750	1	3	1	6	12 sq. ft.
1,800 - 2,500	2	4	1	7	14 sq. ft.
2,500 - 3,000	2	5	1	8	16 sq. ft.
3,000 - 3,500	2	6	1	9	18 sq. ft.
3,500 - 4,000	2	4	2	10	20 sq. ft.
4,000 - 4,500	3	5	2	11	22 sq. ft.
4,500 - 5,000	3	4	3	13	26 sq. ft.
5,000 - 5,500	3	5	3	14	28 sq. ft.
5,500 - 6,000	3	6	3	15	30 sq. ft.

* Total fans equal to one QC 1500 - ie. one QC4500 = QC 1500 fans.

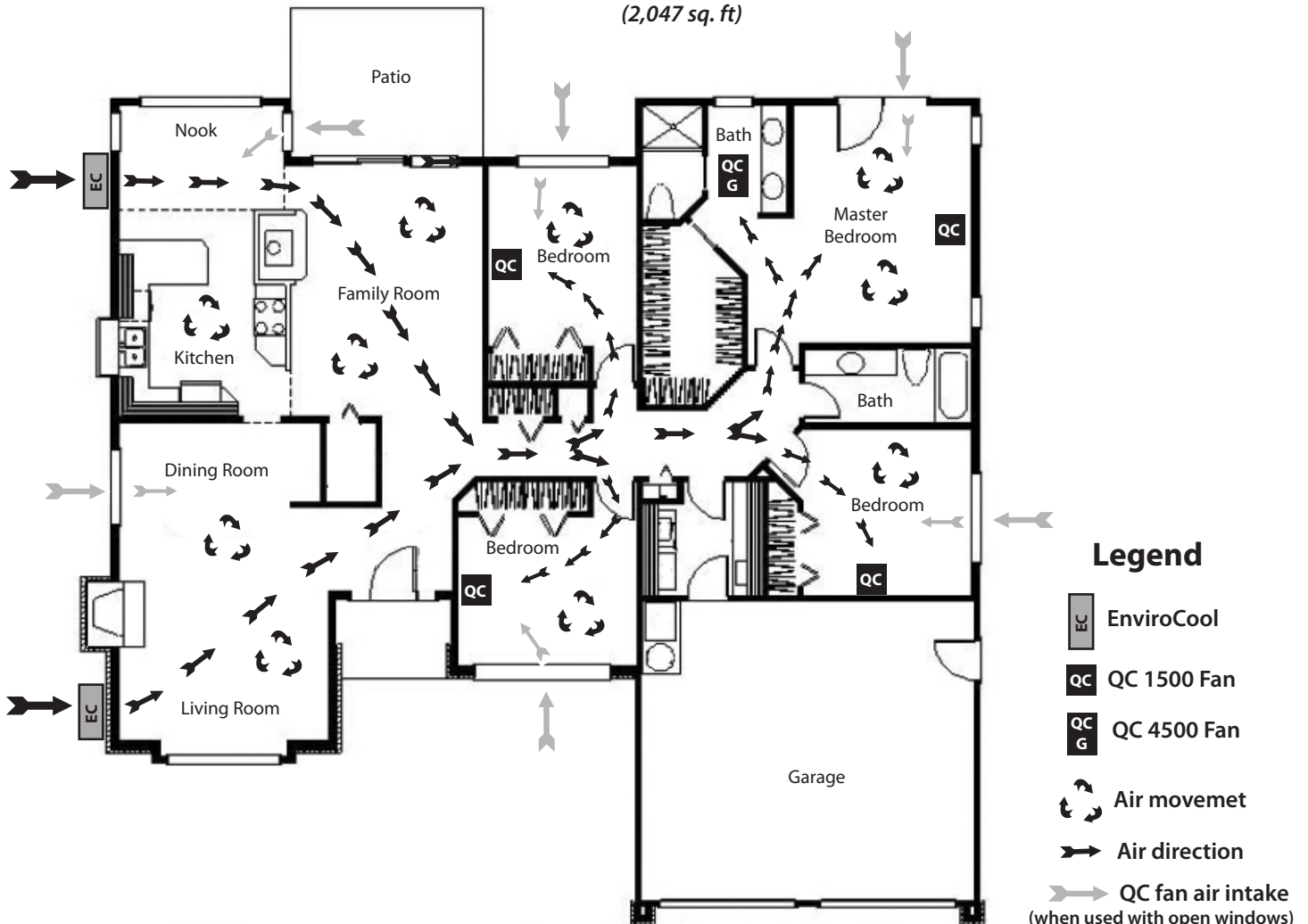
Homes with vaulted ceilings in main area ad 1.25 percent to entire home size i.e. 2,000 (sq. ft.) x 1.25 = 2,500 sq. ft.

Average size Venting Sq. Ft.	Gable vent 12" x 19.5" 1.20	Dormer vent 14" x 8" 0.70	Eave vent 3.5" x 22.5" 0.35	Ridge vent various various	Soffet vent various various
					

THESE SAMPLE FLOOR PLANS SHOW EXAMPLES OF PROPER PLACEMENTS.

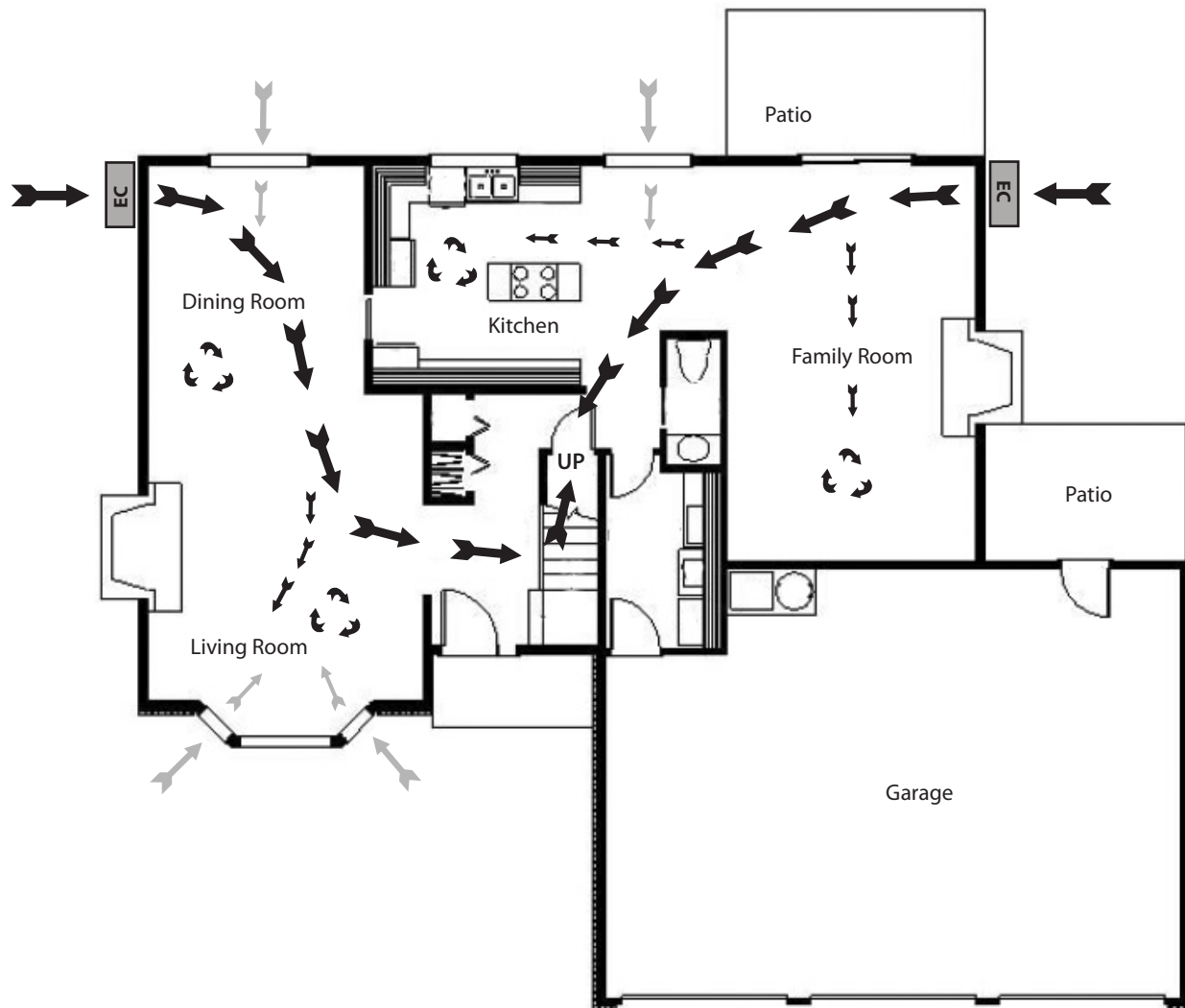
Single Story Example

(2,047 sq. ft)

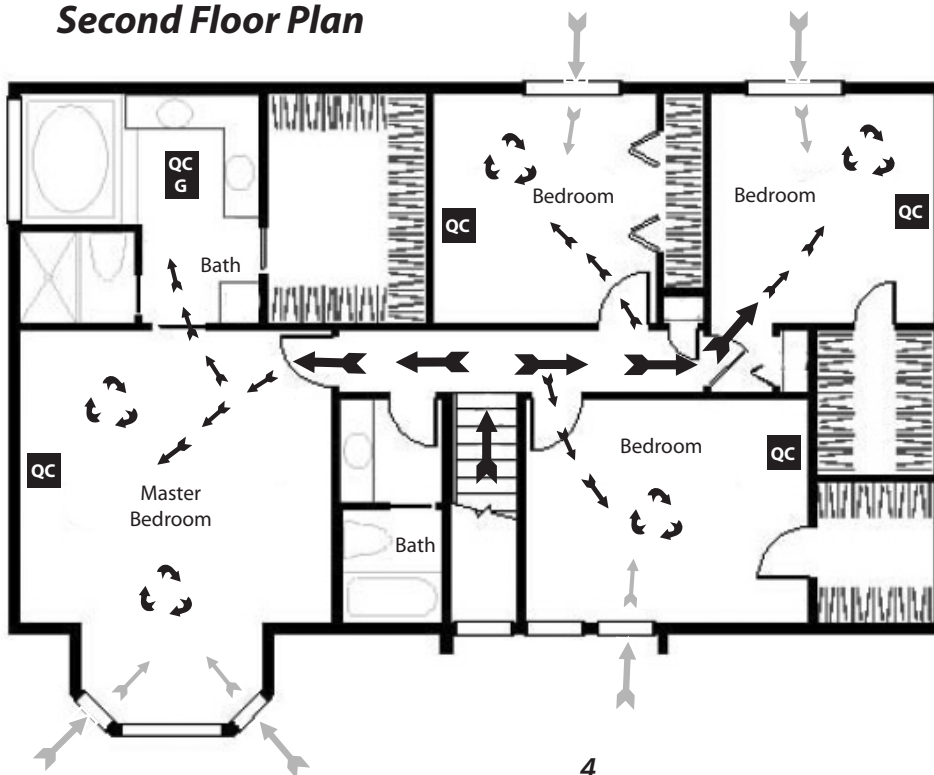


Two Story Example







(2,489 sq. ft)



Second Floor Plan



Legend

-  EnviroCool
-  QC 1500 Fan
-  QC 4500 Fan
-  Air movemet
-  Air direction
-  QC fan air intake
(when used with open windows)

EnviroCool *Installation Instructions*

⚠ Safety Rules

1. Read instructions carefully.
2. Electrical hook up should be done by a qualified electrician. All electrical wiring must conform to local code standards.

⚠ WARNING:

To reduce the risk of electric shock, always disconnect power and unplug pump motor before installation or performing maintenance. Make sure EnviroCool cabinet is properly grounded to a suitable ground connection for maximum safety.

⚠ Avoid Backdrafts

Care should be taken to avoid backdrafting combustion appliances that are installed in the conditioned space. It is strongly recommended that combustion appliances NOT be installed in such a manner that they use room air for combustion. The whole house fans is capable of pulling large quantities of air from the home and particularly if not enough windows are open, may easily backdraft a water heater located inside a louvered closet door.

Select a tentative location. You should consider all the clearances that you will need by observing both inside and outside before making a final selection. Make sure from the outside wall that the unit is high enough that the bottom will not touch the ground and the top won't stick above the window (if placed under window). Usually 36 inches is needed from window to ground level for horizontal.

CLEARANCES around "ROUGH OPENING"

	sides	top	bottom
Exterior	2 1/2"	4"	6"
Interior	1"	1"	1"

1. Make a cutout template out of cardboard using the 'rough opening' dimensions.
2. After making sure you have the clearances needed place the cutout template on the inside wall and draw the template outline. For the vertical model, the template should be centered on a stud. For the horizontal model, it should be centered between the king studs if under a window. The template should be at least 2" above the baseboard to allow for the interior grill.
3. Cutout the drywall per the template using a drywall handsaw. Do not saw through any studs.
4. Remove the drywall cutout and any insulation inside the cavity.
5. Transfer the location to the outside by drilling 3/8" holes at the 4 corners through the outside wall from inside.
6. Temporarily tape plastic or cardboard over the inside opening to keep out dust & debris while cutting the opening in the outside wall.



7. Place the template on the outside wall and draw the outline.
8. Skilsaw (circular saw) to the outline. A diamond saw blade works best. Set the blade depth to the wall thickness plus approx. ¼".
9. If electric wire is encountered in the opening, turn off the power to that circuit and then cut the wire in two at the center of the opening. Chisel a notch in the studs at the sides of the wire opening to bring the wire to the outside, so that the wire is flush with the face of the studs or create new outlets on each side of unit and run new wire to re-feed circuit.
10. If no electric wire is found in the opening, bring a wire from the nearest wall receptacle on the inside wall into the opening and route to the outside by chiseling a notch in the stud as described above.



11. Cut and screw in place ¼" coroplast blocks top and bottom. The coroplast should be wide enough to cover the opening as well as the thickness of the inside drywall edge plus the outside wall edge. The bottom coroplast blocks should slope very slightly downhill toward the outside. Cover the sides of the opening with coroplast and tape the studs with duct tape so that no bare wood is visible. Apply duct tape completely around the opening on both the inside and outside. Install the duct tape by allowing ½ of the width of the tape to be on the coroplast in the opening and the other half of the tape is then folded over onto the inside and outside walls.

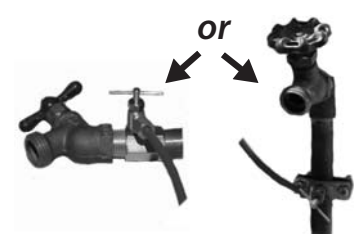


12. Locate and fasten the main frame to the outer wall using (3) #10 x 2" screws on each side that will go through the exterior wall and into each side stud. Where electric wire is protruding, cut a notch in the mainframe using tin snips to eliminate contact with the mainframe. Prior to fastening the mainframe to the wall, run a large bead of window and door caulk around the top and sides of the back of the mainframe to obtain a good seal to the exterior wall. After fastening the mainframe in place, apply an additional small bead of caulk around the top and sides of the mainframe to wall joint.



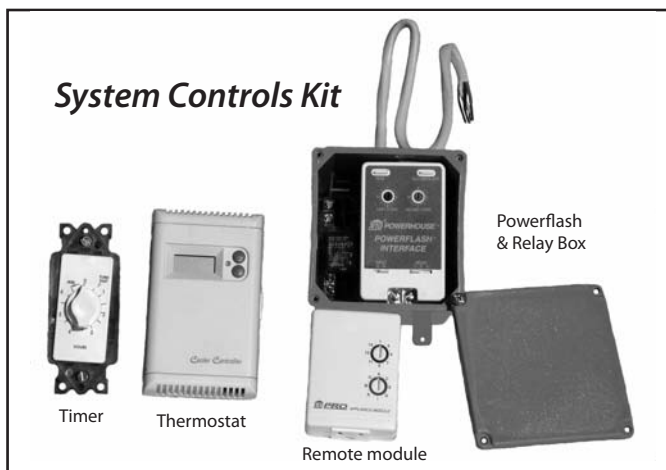
13. Make electrical connections at inside of mainframe at the junction box so that the plug receptacle is hot. Then turn power back on.

14. Bring ¼" poly waterline from nearest outside source such as a hose bib, and connect to bottom left corner of mainframe. Fasten poly pipe to wall with clips to maintain a neat, straight installation so that there are no places for poly pipe to become snagged and damaged.



⚠ IMPORTANT!! – DO NOT CONNECT TO SOFTWATER.
Soft water will damage the media.

15. With water supply turned on, check for correct operation of float valve. Water should fill pan to approx. $\frac{1}{4}$ " to $\frac{3}{4}$ " below top of plastic overflow tube.
16. Install media holder by attaching to mainframe with (4) #10 x 5/8 sheet metal screws.
17. Attach 5/8" poly water tube to water pump and place water pump in right rear corner of water pan. Secure tube to side of media holder with wire ties through adhesive anchor pads.
18. Check for proper flow of water through the media and back into water pan by temporarily plugging pump into receptacle. Allow to run for several minutes and make sure all water is returning into the water pan and that there is no water dripping anywhere.
19. Unplug pump from receptacle, plug Appliance Module into receptacle and then plug pump into bottom of Appliance Module. This remote module will receive it's on and off signals from the remote mounted thermostat and control box.
20. Install the exterior housing. Hold in place, with (2) #10 x 5/8 self drilling sheet metal screws on each side.
21. Install interior grill with white screws provided.
22. Install the thermostat in the wall above the fan timer and install the control box in the attic as per wiring diagram.

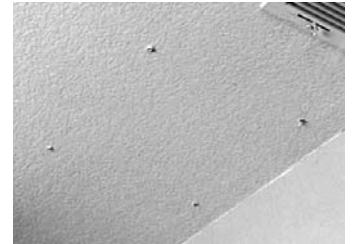


QuietCool fan installation instructions

1. Now that you have determined in which areas you would like to install your QuietCool fans, it's time to go into your attic to mark the exact location for each install from above.



2. When you find a location, move the insulation away to get a clear view. Make sure the template fits between the framing, and there are no other obstructions in your chosen location. If there is a reason you can not use the exact spot, find a location in the area that does work. Place the template on the spot and mark it by making a hole at each corner with a screwdriver.



Repeat these steps at each location

3. Once all locations are marked, move the insulation away and return below to the house. It's now time to cut the holes at each air intake location.



4. Place the cut-out template at each location making sure you have 2 inches of clearance all the way around it. The grill that will be installed later is larger than the template. While holding the template in place, mark around it with a pencil. Using a drywall saw, or similar device, cut out the hole.



Repeat these steps at each location

5. Open and unpack each QuietCool fans. Make sure all parts are present. Most of the system comes pre-assembled. The main assembly should be put up in the attic through the crawl hole and moved into position near the ceiling cutout hole.



6. It's now time to hang the motor heads from the rafters. Your goal is to hang the motor head as far from the hole in the ceiling as possible, while making sure the ceiling box and duct will easily reach the hole.



7. Using the metal strapping attached to the motor head assembly, and the gray deck screws provided, hang the motor head from the rafters. Make sure the motor head is fairly level side to side. Again, make sure the ducting will reach the ceiling cut out with a little slack. You will need to secure the ducting later in these instructions.



8. **⚠ VERY IMPORTANT!** Remove the shipping tape from the back draft dampers. Make sure the dampers will open and close easily and without obstruction.
9. **⚠ VERY IMPORTANT!** Make sure the fan blade spins freely. This is very important to system operation.

Repeat these steps at each location

10. Once all of the QuietCool fans are hung, it's time to go below and install the ceiling box and ceiling grill at each intake location.
11. Look through the hole and make sure there are no kinks or twists in the ducting. Pull the ceiling box down through the hole in the ceiling. While holding it in place, install a 1-3/8" drywall screw through the drywall into the flange of the ceiling box on each side to temporarily hold the box in place. Remove ceiling grill and screws from its packaging. Center the grill over the ceiling box. Install the grill with the white screws provided by screwing through the flange of the ceiling box. Some ceiling surfaces are uneven and may cause a small gap to be present. This can easily be caulked later if excessive.

Repeat these steps at each location

12. Return to the attic and go to each location. Using the nylon straps and the pan head screws provided, support the duct to the framing. Make sure the motor head is still level and the dampers still close naturally. This will stabilize the entire assembly. Replace any insulation that was removed.

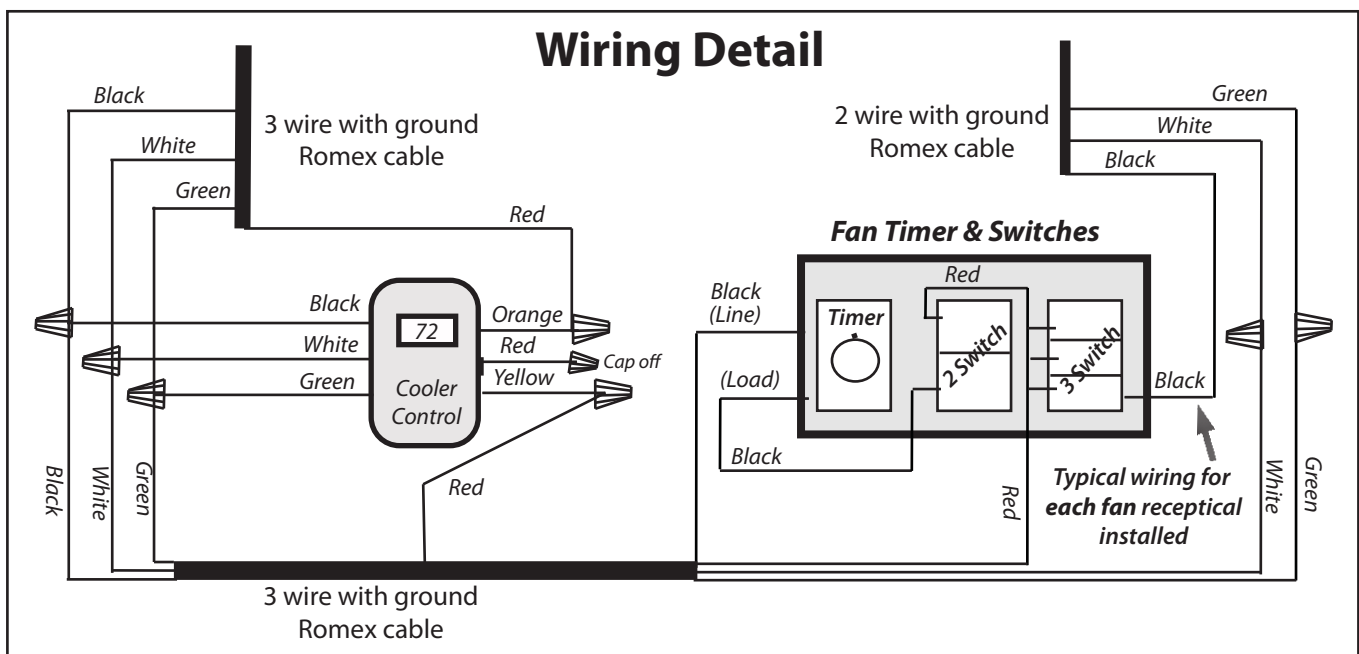
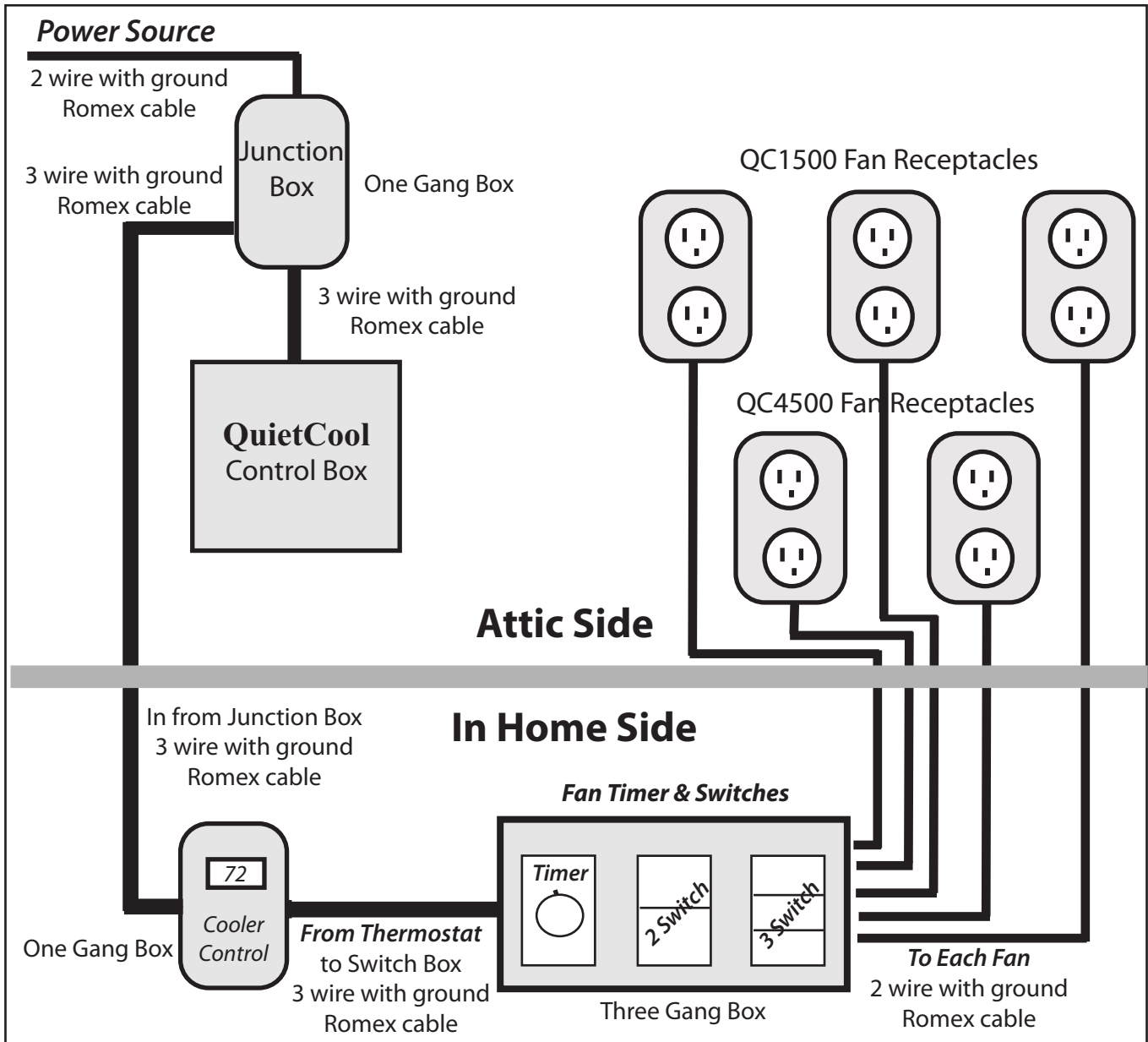
Repeat these steps at each location

13. The installation is now complete except for the electrical work necessary to make them operate. The electrical wiring for the fan requires a 120 volt three prong outlet within 6 feet of the motor head in the attic.

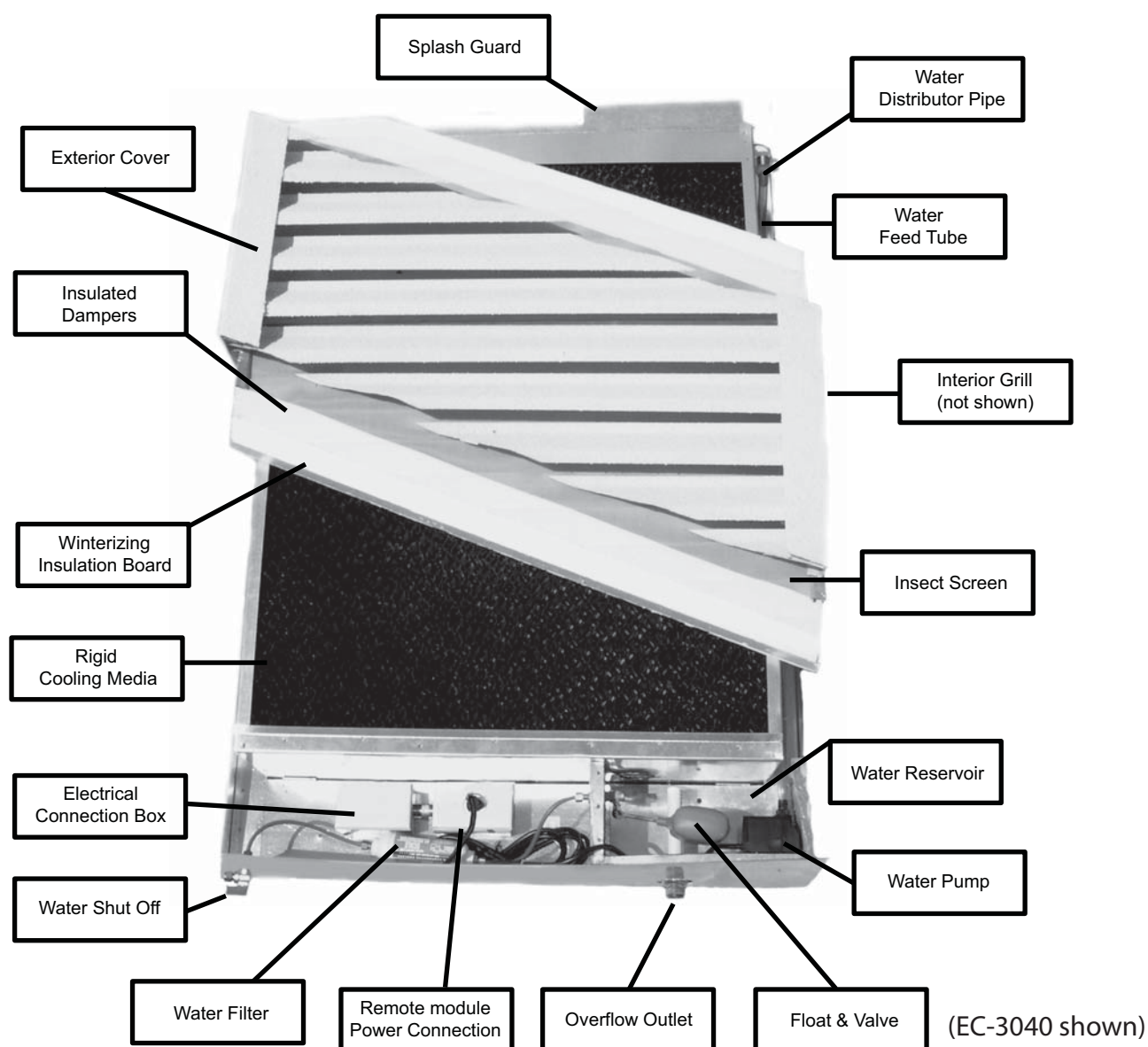
14. The outlet should be wired to and controlled by a two-gang or three-gang box installed in the hallway wall with a timer and switch for each fan.



Wiring Diagram



EnviroCool System Components Detail



Parts List

Interior Grill (not shown)
 Exterior Cover
 Insulated Dampers
 Winterizing Insulation Board
 Rigid Cooling Media Replacement Unit
 Water Shut Off Valve
 Connection Box
 Connection Box Cover
 Water Filter
 Overflow Outlet
 Water Pump
 Float and Valve Assembly
 Water Reservoir
 Insect Screen
 Water Feed Tube
 Water Distributor Pipe
 Splash Guard
 Remote Module

EC 3040 Vertical

EC-14005
 EC-50080V
 EC-60050-V
 EC-60060-V
 EC-60020-V
 AC-45100
 AC-21000
 AC-21020
 EC-20020
 EC-21000
 EC-20025
 EC-20010
 EC-13200
 EC-60040-V
 EC-50035-V
 EC-60030-V
 EC-13015-V
 IT-31010

EC 4824 Horizontal

EC-14000
 EC-50080H
 EC-60050-H
 EC-60060-H
 EC-60020-H
 AC-45100
 AC-21000
 AC-21020
 EC-20020
 EC-21000
 EC-20025
 EC-20010
 EC-13200
 EC-60040-H
 EC-50035-H
 EC-60030-H
 EC-13015-H
 IT-31010

Manufactured by

QuietCool

"The Whisper Quiet Whole House Fan System"

QC 1500 fan



QC 4500 fan



**EC-3040 vertical
EnviroCool**



**EC-4824 horizontal
EnviroCool**

